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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,831	11/30/2000	Neal A. Osborn	035451-0198	1494
26371	7590	01/23/2008		
FOLEY & LARDNER LLP 777 EAST WISCONSIN AVENUE MILWAUKEE, WI 53202-5306			EXAMINER NGUYEN, HAU H	
			ART UNIT 2628	PAPER NUMBER
			MAIL DATE 01/23/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/726,831

Applicant(s)

OSBORN ET AL.

Examiner

Hau H. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 11/16/2007.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 10/30/2007 has been entered.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 11/16/2007 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 45 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Nookala et al. (U.S. Patent No. 5,860,016) ("Nookala", hereinafter).

As per claim 45, Nookala teaches a method of refreshing a display, comprising:

in a first display mode (normal operating mode), retrieving a first amount of information from a first memory device (external memory 202) to be displayed on the display (LCD 203), and

in a second display mode (snooze operating mode), retrieving a second amount of information smaller than the first amount of information from a second memory device to be displayed on the display (only 1 bit per pixel resolution is displayed in snooze mode as compared to 4 bits per pixel resolution in normal mode, see col. 3, lines 41-45, and col. 4, 7-20).

As per claim 47, Nookala teaches *the first amount of information is sufficient for displaying rich color and high resolution on the display and the second, smaller amount of information is for displaying low color and low resolution on the display* (col. 3, lines 39-45, see also col. 6, lines 28-40).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 31-32, 35-37, 40-44, 46, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nookala et al. (U.S. Patent No. 5,860,016).

As per claim 31, Nookala teaches a mobile computing device (200, Fig. 2), comprising:
a memory (202) ;

a display configured to display in more than one display mode;

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a display controller (211) coupled to the display (203) and an internal display memory (on-chip memory 209);

a processor (206) coupled to the memory (202) and the display controller (211), wherein one of the processor and display controller is configured to operate display logic (state machine 207) configured to change the display mode (the CPU controls the state machine 207 to operate in either snooze operating mode or normal operating mode, see col. 3, lines 25-50),

wherein in a first display mode (normal operating mode) the display controller is configured to retrieve a first amount of information from the memory (from DRAM 202) to be displayed on the display, and

in a second display mode (snooze operating mode) the display controller is configured to retrieve a second amount of information smaller than the first amount of information from the internal display memory to be displayed on the display (only 1 bit per pixel resolution is displayed in snooze mode as compared to 4 bits per pixel resolution in normal mode, see col. 3, lines 41-45, and col. 4, 7-20).

Nookala does not explicitly teach the display controller *comprising* the internal display memory. However, since the on-chip memory 209 contains only data to be displayed on the LCD 203 and its size is small (2 Kbytes, col. 4, lines 7-20), it would have been obvious to one skilled in the art to incorporate the memory 209 into the display controller 211 in order for the display controller to easily retrieve data to be displayed in the snooze mode, the advantage of which is that the display controller can directly retrieve display data from its own internal memory without the need of the memory controller 210.

As per claim 32, as cited above, Nookala teaches the first amount of information is sufficient for displaying rich color and high resolution on the display and the second, smaller amount of information is for displaying low color and low resolution on the display (col. 3, lines 39-45, see also col. 6, lines 28-40).

As per claim 35, as cited above, Nookala teaches the display logic (*state machine 207*) is configured to change the display mode based on requirements (*e.g. for power management, col. 2, lines 27-29*) dictated by an operating system running on the processor.

As per claim 36, Nookala teaches in the second mode (snooze mode) the first memory device is powered down (*i.e. in snooze operating mode, the external memory 202 is inactive, and the system is operating in a low power operating mode (col. 5, lines 3-7), and clocks to all modules except LCD controller 211 and memory controller 210 are shut off, col. 5, lines 27-32*).

As per claim 37, Nookala teaches the internal display memory comprises random access memory (col. 4, lines 10-12).

As per claim 40, as shown in Fig. 2, Nookala teaches a mobile device, *comprising:*
a display controller (211);
an internal display memory (on-chip memory 209);
display logic (state machine 207) configured in a first display mode (normal mode) to retrieve a first amount of information from a memory to be displayed on a display (retrieved from external memory 202) and in a second display mode (snooze mode) to retrieve a second amount of information smaller than the first amount of information from the internal display memory to be displayed on the display (see col. 3, lines 35-45, and col. 4, lines 4-23).

Nookala does not teach the display controller 211 to include the internal display memory and the display logic. However, it would have been obvious to one skilled in the art to utilize the method as taught by Nookala to include the internal display memory 209 and the display logic 207 so that the display controller has direct access to the internal memory and the display logic to change the display modes.

As per claim 41, Nookala teaches *the first amount of information is sufficient for displaying rich color and high resolution on the display and the second, smaller amount of information is for displaying low color and low resolution on the display* (col. 3, lines 39-45, see also col. 6, lines 28-40).

As per claim 42, Nookala teaches the display controller is configured to change modes based on logic operating on a processor (CPU 206) coupleable to the display controller (e.g. for power management).

As per claim 43, Nookala teaches the second mode (snooze operating mode) is a low power mode (col. 5, lines 3-7).

As per claim 44, as cited above, Nookala also teaches the internal display memory comprises random access memory (col. 4, lines 10-12).

As per claim 46, as cited above, Nookala teaches the first memory device (memory 202) is a main memory for an electronic device 200 (memory that can provide full color display to the display 203). Nookala does not explicitly the second memory device is an internal display memory of a display controller.

However, since the on-chip memory 209 contains only data to be displayed on the LCD 203 and its size is small (2 Kbytes, col. 4, lines 7-20), it would have been obvious to one skilled

in the art to incorporate the memory 209 into the display controller 211 in order for the display controller to easily retrieve data to be displayed in the snooze mode, the advantage of which is that the display controller can directly retrieve display data from its own internal memory, and thereby bypassing the memory controller.

Claim 49, which is similar in scope to claim 36, is thus rejected under the same rationale.

7. Claims 33, 38-39, 48, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nookala et al. (U.S. Patent No. 5,860,016) in view of O'Leary (U.S. Patent No. 6,750,850).

As per claim 33, Nookala fails to explicitly teach *in the second mode only textual types of graphical information are displayed*. However, O'Leary teaches a mobile device 30 as shown in Fig. 1, comprises a memory (54), a processor (50), display screen (34) (Fig. 2). O'Leary further teaches the size of the memory 54 is small and store text and graphics icons (col. 3, lines 32-57).

Since O'Leary and Nookala teach the memory device for display on the display device is limited in size and display capability, O'Leary teach the limited memory can display textual types of graphics information, it would have been obvious to one skilled in the art to utilize the method as taught by O'Leary in combination with the method as taught by Nookala so that less information is displayed on the display device, and thereby conserving power of the mobile device.

As per claim 38, as shown in Fig. 2, Nookala teaches the mobile device further comprises a communication device 205. Nookala does not explicitly teach *the mobile computing device comprises a wireless data communications device, wherein the processor is configured to synchronize data with a computer*. However, O'Leary teaches a mobile device 30 as shown in

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Fig. 1, comprises a memory (54), a processor (50), display screen (34), a wireless receiver (52) couple to the processor (see Fig. 2). O'Leary further teaches the processor is configured to synchronize data between the mobile device 30 (Fig. 1) and a personal computer 55 via the wireless receiver 52 (Fig. 3, see col. 4, lines 13-30, and col. 5, lines 58-64).

Therefore, it would have been obvious to one skilled in the art to utilize the method of synchronizing with a personal computer via a wireless communication device as taught by O'Leary incorporating into the communication device of the mobile device as taught by Nookala in order to upload data to or download data from the computer wirelessly (col. 4, lines 13-30).

As per claim 39, Nookala fails to teach the mobile device further comprising *a cellular telephone*. However, O'Leary teaches the wireless mobile device can be combined with a cellular phone (col. 2, lines 58-65).

Therefore, it would have obvious to one skilled in the art to utilize the method as taught by O'Leary in combination with the method as taught by Nookala in order to increase the functionality for the mobile device not only as data management but also as mobile phone (col. 2, lines 58-65).

As per claim 48, the limitation "*in the second mode only textual types of graphical information are displayed*" has been addressed above with reference to claim 33. Therefore, claim 48 is rejected under the same rationale.

As per claim 50, although not explicitly taught by Nookala, O'Leary, as cited above with reference to claim 38, teaches a mobile device that can synchronize data with a computer over a wireless communication interface.

Therefore, it would have been obvious to one skilled in the art to utilize the method of synchronizing with a personal computer via a wireless communication device as taught by O'Leary incorporating into the communication device of the mobile device as taught by Nookala in order to upload data to or download data from the computer wirelessly (col. 4, lines 13-30).

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nookala et al. (U.S. Patent No. 5,860,016) in view of Fujimoto (U.S. Patent No. 5,500,654).

As per claim 34, Nookala fails to teach *the processor is configured in the first mode to operate a first application stored in memory and in the second mode to operate a second application stored in memory*. However, this is taught by Fujimoto. As shown in Fig. 1, Fujimoto teach a portable computer comprising a display control system 4 which includes a VRAM 30 to store application program in a first mode (XGA mode, high resolution) and a second mode (VGA mode, low resolution) (col. 4, lines 54-65).

Therefore, it would have been obvious to one skilled in the art to utilize the method as taught by Fujimoto in combination with the method as taught by Nookala the advantage of which is that application programs of different display modes can be stored in the same memory so that the CPU to retrieve an application program with desired resolution.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/H. Nguyen/

Hau Nguyen

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